

Appl. No. 10/080,042
Atty. Docket No. 8754M
Amdt. dated 09/22/2005
Reply to Office Action of 06/23/2005
Customer No. 27752

REMARKS

Claim Status

Claims 1-21 are pending in the present application. No additional claims fee is believed to be due.

Rejection Under 35 USC §103(a) Over Noda in View of Tomka

Claims 1-14 and 18-21 have been rejected under 35 USC §103(a) as being obvious and therefore unpatentable over U.S. Patent No. 5,498,692, hereinafter referred to as "Noda", in view of U.S. Patent No. 5,844,023, hereinafter referred to as "Tomka". Applicants respectfully traverse these rejections.

According to § 706.02(j) of the MPEP, three basic criteria must be met in order to establish a prima facie case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings. Second, there must be a reasonable expectation of success. Third, when combined, the prior art references must teach or suggest all the claim limitations. On the following bases, Applicants assert that Noda in view of Tomka does not meet all three of these criteria and as such cannot render the current claims obvious.

I. There is no suggestion or motivation in Noda or Tomka to combine reference teachings.

Noda discloses biodegradable copolymers and plastic articles comprised thereof. *See col. 3, line 65 to col. 4, line 21.* The "...biodegradable copolymers are polyhydroxyalkanoate (PHA) copolymers comprising at least two randomly repeating monomer units." *See col. 3, lines 65-67.* The second randomly repeating monomer unit of Noda PHAs must have an alkyl branch of at least three carbons (*see col. 12, lines 10-27*); this substitution makes the Noda PHAs distinctly different from PHAs with shorter alkyl branches, such as polyhydroxybutyrate (PHB) and polyhydroxyvalerate (PHBV), which are disclosed in Tomka. For example, the Noda PHAs "...as compared to PHB or PHBV [have]: a lower melt temperature, b) a lower degree of crystallinity, and c) an improved melt rheology", three characteristics that make the Noda PHAs surprisingly easier to process into films as compared to PHB or PHBV. *See col. 12, lines 17-27.*

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Tomka discloses a "biologically degradable polymer mixture" consisting essentially of the following 3 components:

- (a) at least one hydrophobic polymer, which may comprise any one or a combination of the following: cellulose derivatives; hydrophobic proteins; polyvinyl alcohol; and/or an aliphatic polyester. The aliphatic polyester may in turn be caprolactone, polylactic acid, *polyhydroxybutyric acid (PHB)* or a *polyhydroxybutyric acid/hydroxyvaleric acid (PHBV) copolymer* (see col. 5, line 65 to col. 6, line 10);
- (b) thermoplastically processable starch (TPS); and
- (c) a phase mediator and/or a macromolecular dispersing agent.

See col. 4, lines 32-42; col. 5, lines 12-63; and claim 1.

Tomka teaches that the phase mediator and/or macromolecular dispersing agent is necessary to overcome "...the problem that two immiscible phases are present" in its disclosed polymer mixture, such as when hydrophilic starch is combined with hydrophobic polymers, such as PHB or PHBV. *See col. 3, lines 45-61.*

Tomka does not teach or suggest the selection of the Noda PHAs for use in combination with TPS. Noda does not teach or suggest combining its PHAs with other polymers, much less TPS, in order to make its disclosed plastic articles. Neither Tomka nor Noda teaches or suggests the selection of the Noda PHAs, which have improved melt rheology as compared to PHB or PHBV, much less combining the Noda PHAs with TPS *without* what is taught as an "essential" phase mediator and/or macromolecular dispersion in order to render the resulting phases miscible. Thus, Applicants assert that neither Noda nor Tomka would provide either suggestion or motivation to one of skill in the art to combine the references to make the presently claimed invention.

II. There would be no reasonable expectation of success in combining Noda and Tomka.

One of skill in the art would have no reasonable expectation of successfully combining the starch of Tomka with the PHAs taught by Noda. Tomka affirms throughout its specification (see, for example: the Abstract; col. 4, lines 32-43; and col. 5, lines 12-22) that, in order for its disclosed hydrophilic starch phase and hydrophobic polymer phase to have good miscibility or for the starch to be suitably dispersible in the

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hydrophobic polymer, one of three compounds must additionally be present in the starch/polymer melt mixture: (1) a phase mediator; (2) a dispersing agent; or (3) another polymer soluble in the hydrophobic polymer phase having groups which are reactive to starch. *See col. 8, line 6, through col. 9, line 8.* Thus upon reading Tomka, one of skill in the art would have no reasonable expectation of successfully processing starch and a thermoplastic polymer, much less a PHA, without adding an additional compound to molecularly couple the starch and polymer phases, which would otherwise be immiscible.

In contrast, it is clearly evident from the present claims and specification that the combination of TPS with the Noda PHAs surprisingly allows for processability without any additional compounds to make the TPS and PHA miscible. Indeed, the "...copolymer [of the present invention] may be present as a continuous phase in the composition." *See paragraph [0027].* Moreover, the Noda "PHA copolymers have excellent affinity to solid particle surfaces, such as starch, thereby allowing for straightforward dispersion of such particles during a stretching step in producing breathable films." *See paragraph [0028].*

On the foregoing bases, Applicants assert that Noda in view of Tomka does not meet all three of the basic criteria to establish a prima facie case of obviousness as per § 706.02(j) of the MPEP. Therefore, Applicants respectfully request withdrawal of the § 103(a) rejections of claims 1-14 and 18-21.

Obviousness Double Patenting

The Examiner has rejected claims 1-21 for obviousness-type double patenting over claims 1-15 of U.S. Patent No. 6,808,795 B2 issued to Noda, in view of U.S. Patent No. 5,814,404, issued to Rutherford, and U.S. Patent No. 5,844,023, issued to Tomka. Pursuant to M.P.E.P. §1490, Applicants enclose an appropriate Terminal Disclaimer compliant with 35 U.S.C. §253 and 37 C.F.R. §3.73 in order to obviate the double patenting rejection.

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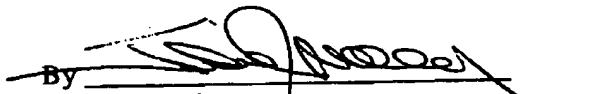
Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejection under § 103(a) and the obviousness-type double patenting rejection. Early and favorable action in the case is respectfully requested.

This response represents an earnest effort to place the application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, reconsideration of this application and allowance of Claims 1-21 is respectfully requested.

Respectfully submitted,

THE PROCTER & GAMBLE COMPANY

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